

Figure 1

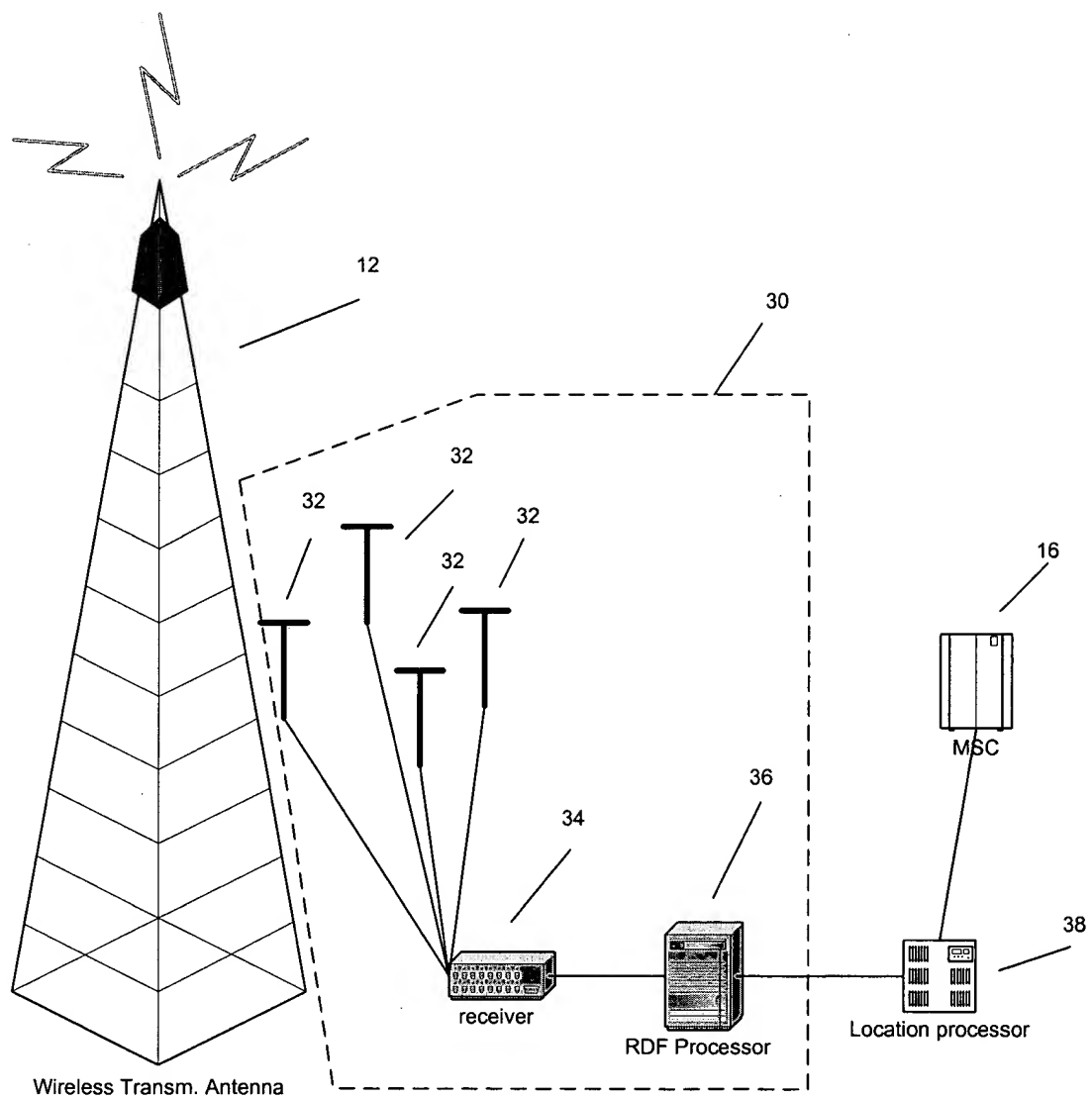


Figure 2

Patented by 3M

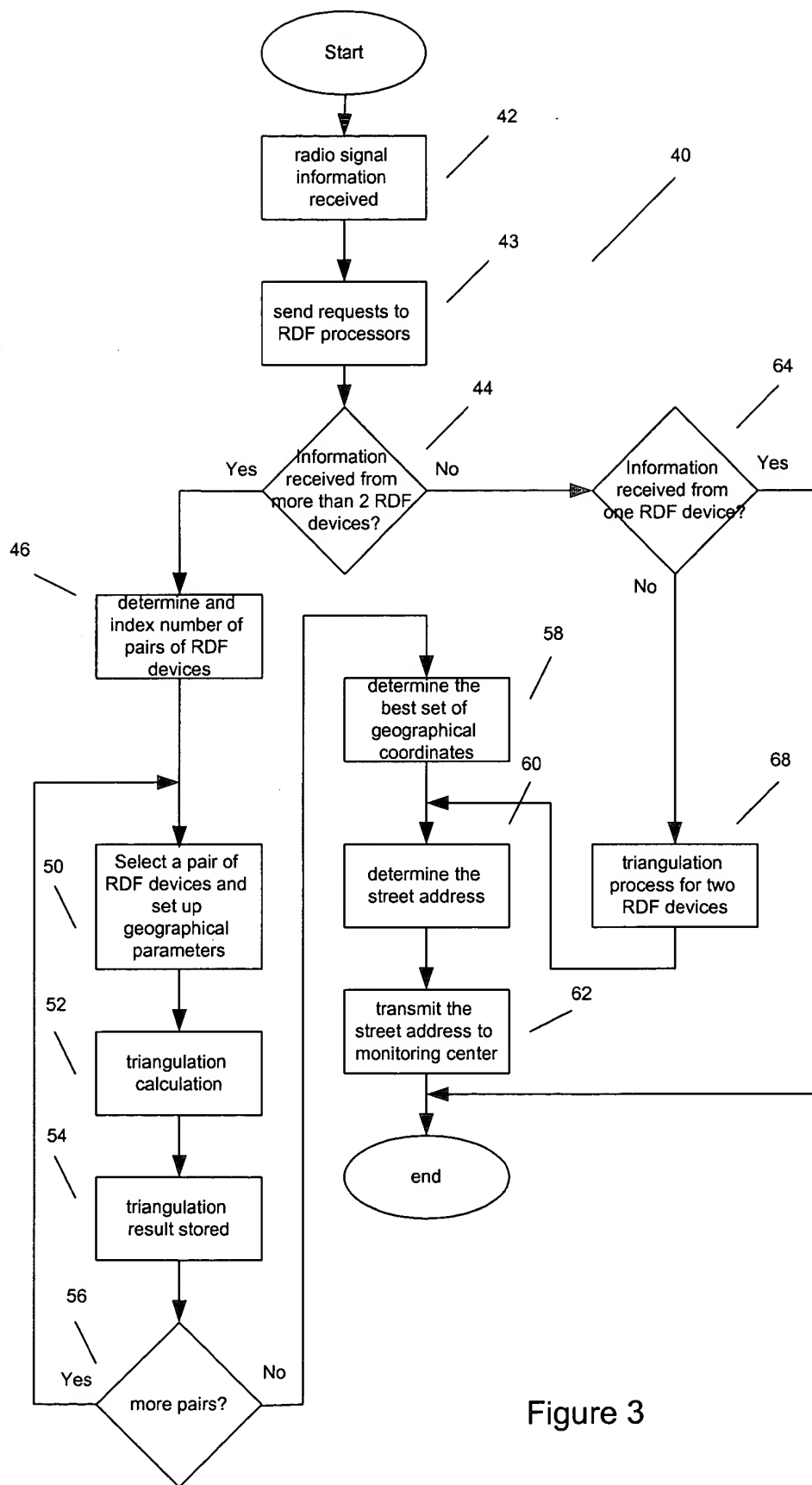


Figure 3

Patent 6,346,663

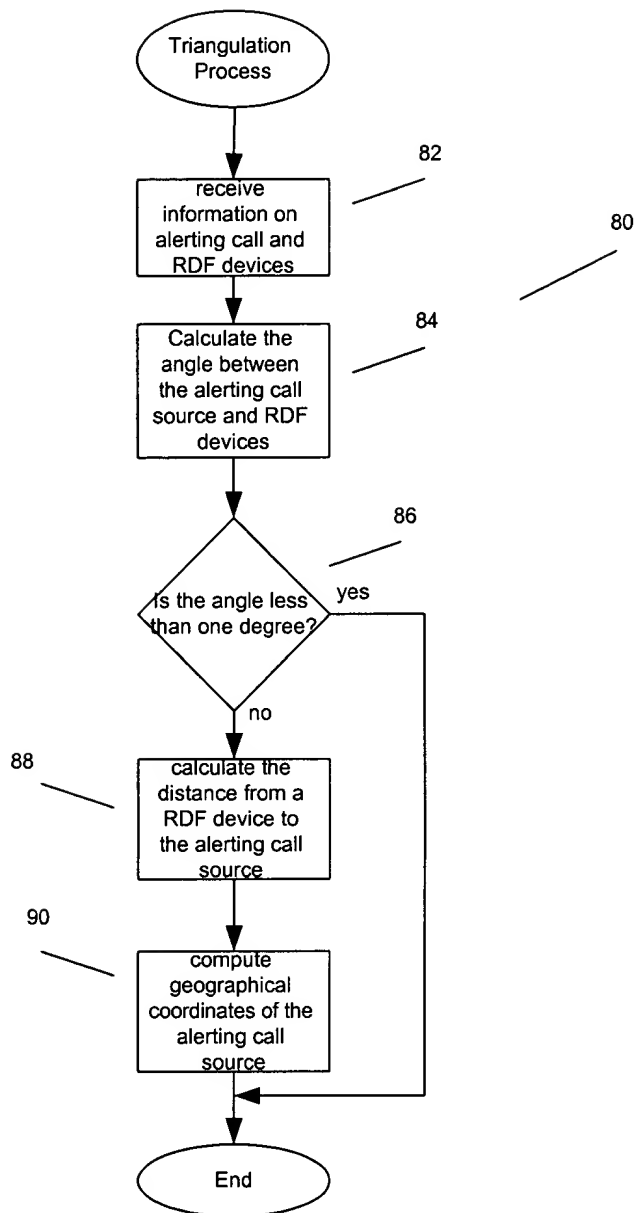
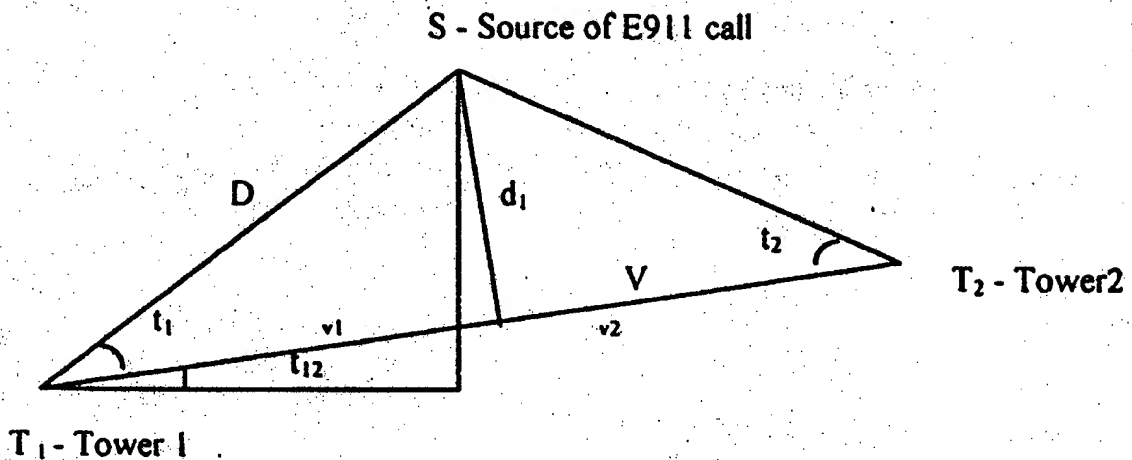


Figure 4



## DEFINITIONS

- $d_1$  is the perpendicular distance from Source, S, to the vector, V, connecting T<sub>1</sub> and T<sub>2</sub>
- D is the derived distance from S to T<sub>1</sub>
- V is the length of the vector from T<sub>1</sub> to T<sub>2</sub>
- $v_1$  is the distance from T<sub>1</sub> to  $d_1$
- $t_1$  is the angle from S to T<sub>2</sub>
- $t_{12}$  is the angle at T<sub>1</sub> from the vector, V, to a line representing the Latitude of T<sub>1</sub>
- $t_2$  is the angle from S to T<sub>1</sub>
- V is the sum of  $v_1$  and  $v_2$

$$v_1 = V (\tan t_2) / [(\tan t_1) + (\tan t_2)] \quad \text{Equation 1}$$

$$D = v_1 / \cos t_1 \quad \text{Equation 2}$$

$$\text{Source Latitude} = T_1 \text{ Latitude} + D \sin (t_1 + t_{12}) \quad \text{Equation 3}$$

$$\text{Source Longitude} = T_1 \text{ Longitude} + D \cos (t_1 + t_{12}) \quad \text{Equation 4}$$

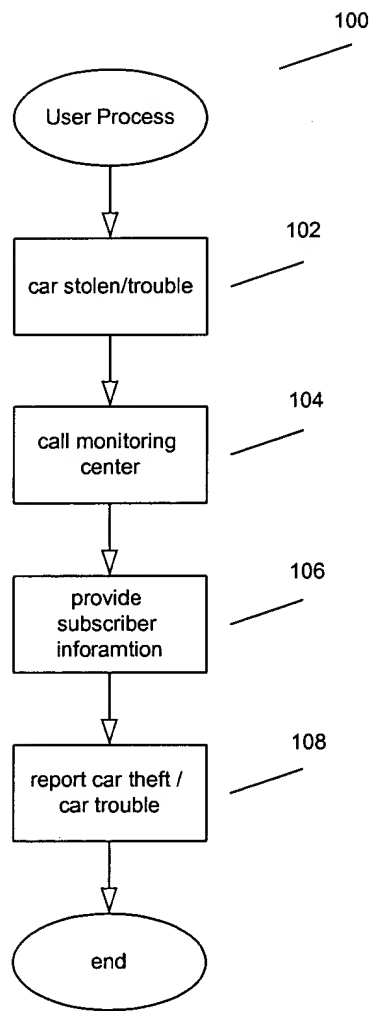


Figure 6

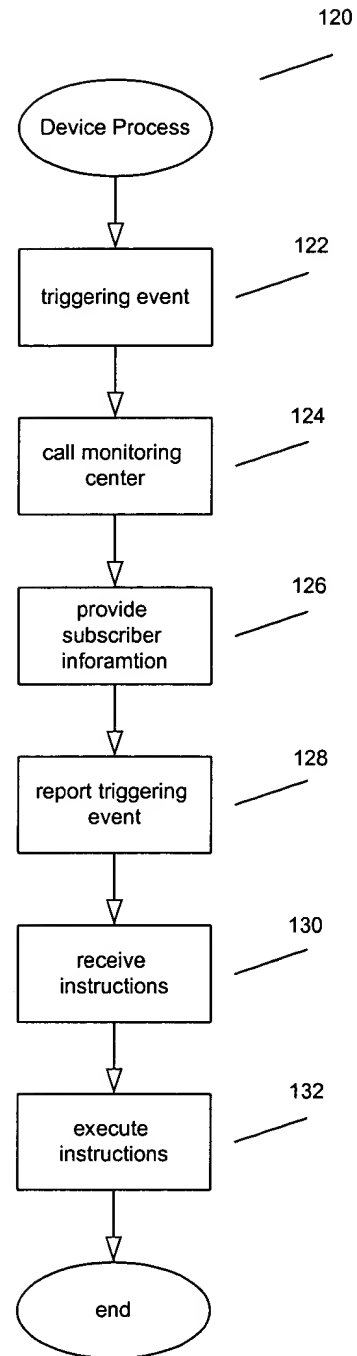


Figure 7

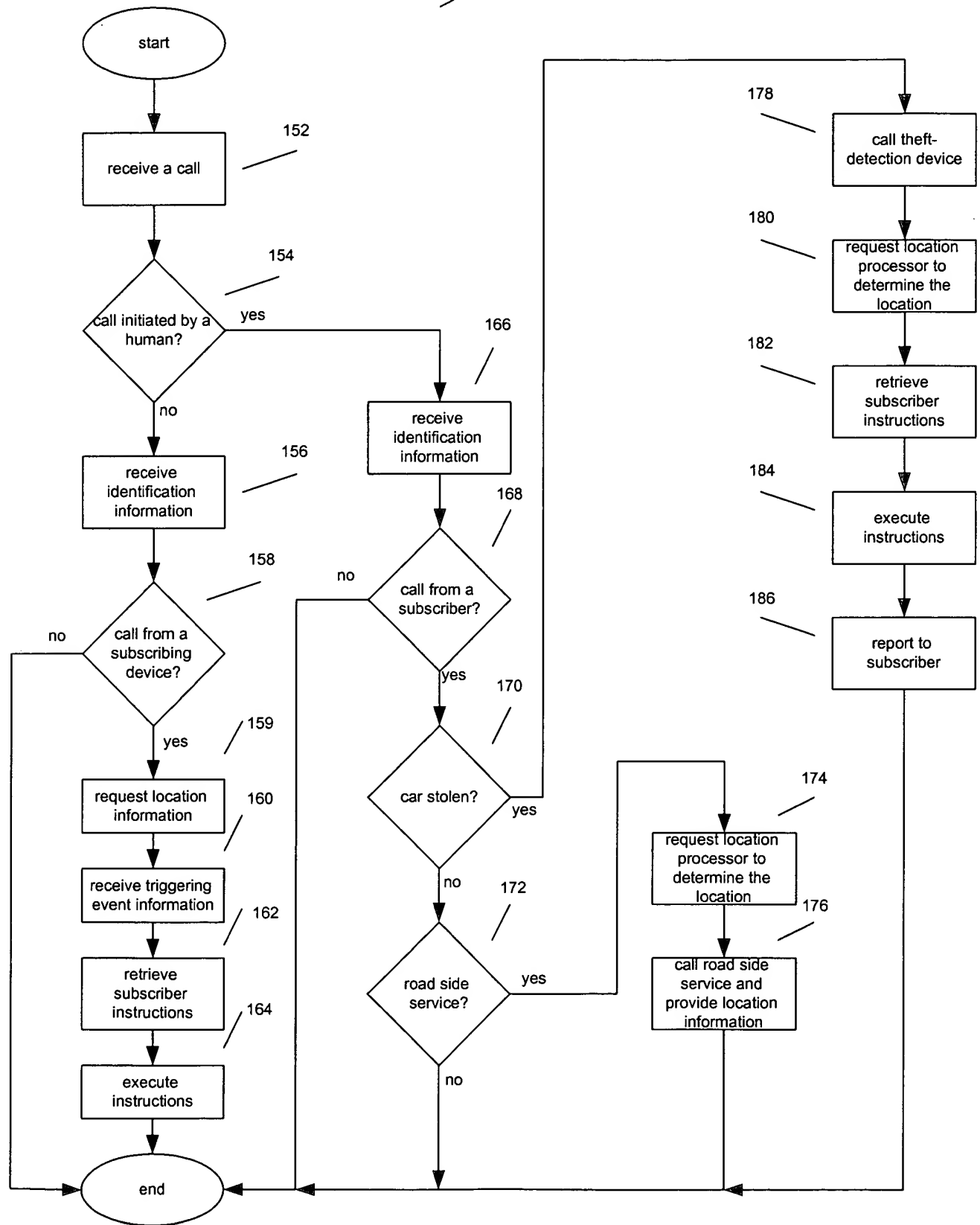


Figure 8

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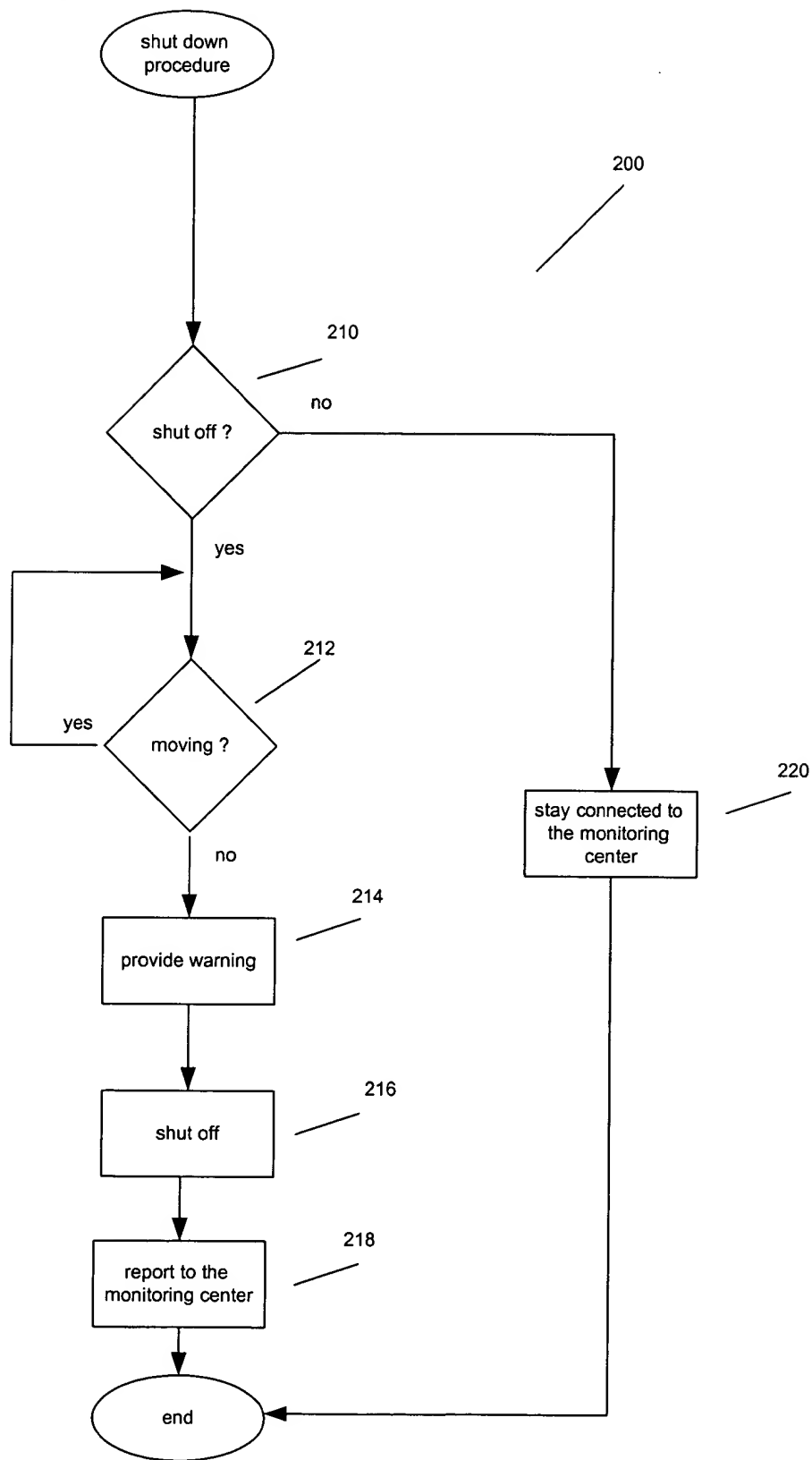


Figure 9



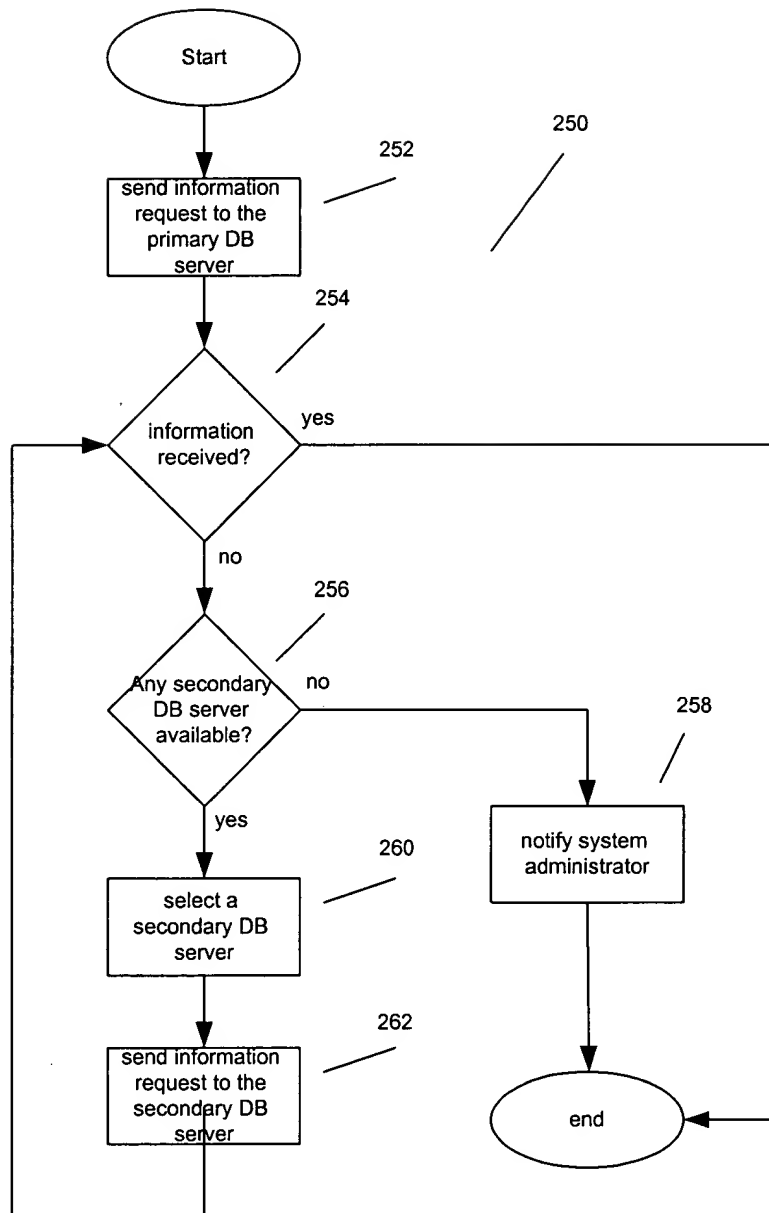


Figure 10

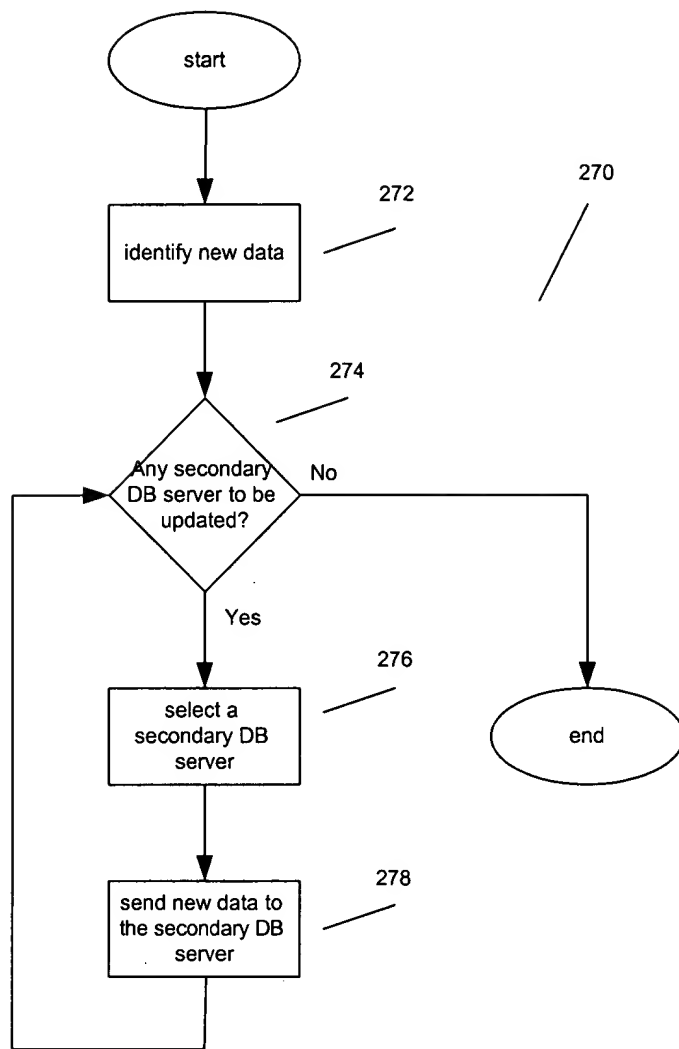


Figure 11